CLAIMS

What is claimed is:

1. A method of fabricating a substrate assembly, comprising:

providing a substrate having a first surface and an opposing second surface;

forming a layer of resilient conductive material on at least a portion of at least one of said first and second surfaces of said substrate;

forming at least one electrically isolated spring-biased electrical contact in said layer of resilient conductive material;

forming at least one electrically isolated conductive trace in said layer of resilient conductive material, said at least one electrically isolated conductive trace having an end terminating at said at least electrically isolated spring-biased electrical contact; and

treating said layer of resilient conductive material after said forming said at least one electrically isolated spring-biased electrical contact to achieve at least one desired physical characteristic of said layer of resilient conductive material.

2. The method of claim 1, wherein said forming a layer of resilient conductive material on at least a portion of at least one of said first and second surface of said substrate comprises:

providing a laminate sheet of said resilient conductive material; and

bonding said laminate sheet to said at least one of said first and second surfaces of said substrate.

3. The method of claim 2, wherein said bonding said laminate sheet to said at least one of said first and second surfaces of said substrate comprises adhering said laminate sheet to said at least one of said first and second surfaces of said substrate using an adhesive or bonding said laminate sheet to said at least one of said first and second surfaces of said substrate using a thermocompression bonding process.

4. The method of claim 1, wherein said forming a layer of resilient conductive material on at least a portion of at least one of said first and second surfaces of said substrate comprises forming said layer of resilient conductive material on said at least one of said first and second surfaces of said substrate using a deposition process.

5. The method of claim 4, wherein said deposition process comprises chemical vapor deposition or sputtering.

6. The method of claim 1, further comprising forming at least one via in said substrate, said at least one via underlying said at least one electrically isolated spring-biased electrical contact.

7. The method of claim 6, wherein said forming at least one via in said substrate further comprises forming a via opening only to said at least one of said first and second surfaces of said substrate.

8. The method of claim 1, further comprising preforming said at least one electrically isolated spring-biased electrical contact to include a permanent deflection.

9. The method of claim 1, further comprising forming at least one contact element on a surface of said at least one electrically isolated spring-biased electrical contact.

10. The method of claim 9, wherein said forming at least one contact element further comprises forming a plurality of alternating grooves and ridges, forming at least one protrusion, or forming a roughened surface.

11. The method of claim 10, wherein forming a plurality of alternating grooves and ridges, forming at least one protrusion or forming a roughened surface is effected by etching.

12. The method of claim 1, wherein said forming at least one electrically isolated spring-biased electrical contact in said layer of resilient conductive material comprises forming a cantilevered spring, forming a transversely deflecting hoop-shaped spring, forming a spiral-shaped spring, or forming a rosette spring.

13. The method of claim 1, wherein at least one of forming at least one electrically isolated spring-biased electrical contact in said layer of resilient conductive material and forming at least one electrically isolated conductive trace in said layer of resilient conductive material is effected by etching said layer of resilient conductive material.

14. A method of fabricating a substrate assembly, comprising:

providing a substrate having a first surface and an opposing second surface;

forming a layer of resilient conductive material on at least a portion of at least one of said first and second surfaces of said substrate, said resilient conductive material exhibiting at least one first physical characteristic;

forming at least one electrically isolated spring-biased electrical contact in said layer of resilient conductive material;

forming at least one electrically isolated conductive trace in said layer of resilient conductive material, said at least one electrically isolated conductive trace having an end terminating at said at least one electrically isolated spring-biased electrical contact; and

treating said layer of resilient conductive material to achieve at least one second physical characteristic of said resilient conductive material.

15. The method of claim 14, wherein said at least one first physical characteristic is selected to optimize properties of said layer of resilient conductive material for said act of forming at least one electrically isolated spring-biased electrical contact therein.

16. The method of claim 14, wherein said at least one second physical characteristic is selected to optimize spring characteristics of said at least one electrically isolated spring-biased electrical contact.

17. The method of claim 14, wherein at least one of forming at least one electrically isolated spring-biased electrical contact in said layer of resilient conductive material and forming at least one electrically isolated conductive trace in said layer of resilient conductive material is effected by etching said layer of resilient conductive material.

18. The method of claim 1, further including disposing a dielectric layer overlying said layer of resilient conductive material, said dielectric layer being formed with at least one aperture therethrough substantially aligned with said at least one electrically isolated spring-biased electrical contact.

19. The method of claim 18, further comprising forming said dielectric layer to be of sufficient thickness to encompass at least a portion of each lead element of an integrated circuit device contacting said at least one electrically isolated spring-biased electrical contact.

20. The method of claim 18, further including forming said at least one aperture to be of frustoconical configuration.

21. The method of claim 18, further including preforming said dielectric layer with said at least one aperture prior to disposing said dielectric layer over said layer of resilient conductive material.

22. The method of claim 18, further including forming said dielectric layer in place over said layer of resilient conductive material and subsequently forming said at least one aperture therethrough.

23. The method of claim 14, further including disposing a dielectric layer over said layer of resilient conductive material, said dielectric layer being formed with at least one aperture therethrough substantially aligned with said at least one electrically isolated spring-biased electrical contact.

24. The method of claim 23, further comprising forming said dielectric layer to be of sufficient thickness to encompass at least a portion of each lead element of an integrated circuit device contacting said at least one electrically isolated spring-biased electrical contact.

25. The method of claim 24, further including forming said at least one aperture to be of frustoconical configuration.

26. The method of claim 23, further including preforming said dielectric layer with said at least one aperture prior to disposing said dielectric layer over said layer of resilient conductive material.

27. The method of claim 23, further including forming said dielectric layer in place over said layer of resilient conductive material and subsequently forming said at least one aperture therethrough.